

Fig. 1

Formulation components and physical properties of substrate materials synthesized in examples and the comparative example

UL 94		VO	VO	V2
Hardener $A1(OH)_3$ $A1_2O_3$ Solvent $A1(OH)_3$ $A1_2O_3$ Solvent $A1(OH)_3$ $A1_2O_3$ $A1_2O_$		7.3	3.1	
Tg (TMA, °C)		165	645.6 161	
Solvent DMF(g)		369.7 1372 484.2 645.6	645.6	645.6
Al <sub>2</sub> 0 <sub>3</sub> (g)		484. 2		
A1(0H) <sub>3</sub>		1372	1856. 2	
Hardener DDS(g)		369. 7	369. 7	369.7
Diglycidyl ether of bisphenol A epoxy resin(g)		912. 3g	912.3g	912. 3g
Synthetic resin	Solvent, DMF (g)	245.8	245.8	245.8
	Epoxy resin of Retardant Solvent, bisph or novolac (g) type(g)	453.2	453.2	453. 2
	Epoxy resin of cresol novolac type(g)	530	530	530
		Example 1	Example 2	Comparative example

Fig. 2